

B 44. (New) The method of Claim 24, wherein the intelligibility score is an objective measurement of the speaker's intelligibility.

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### REMARKS

In the Office Action dated December 4, 2002, the Examiner (i) rejected Claims 1, 2, 5, 7, 8, 36, and 37 under 35 U.S.C. § 102(b); (ii) rejected Claims 3, 4, 6, 8-35, and 38-40 under 35 U.S.C. § 103(a); and (iii) provisionally rejected Claims 1-40 under the judicially created doctrine of obvious-type double patenting. The Applicants have cancelled Claims 25, 27, and 31; amended Claims 1 and 24; and added Claims 41-44. No new matter has been added.

The Applicants respectfully traverse the claim rejections and request reconsideration. Further, to the extent the Examiner relies on common knowledge in the art for the § 103(a) rejections, the Applicants respectfully request the Examiner to provide references supporting his position. (See M.P.E.P. § 2144.03.)

#### **I. Claim Rejections under 35 U.S.C. § 102(b)**

The Examiner rejected Claims 1, 2, 5, 7, 8, 36, and 37 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,634,086 ("Rtischev"). The Applicants respectfully traverse these rejections. In amended Claim 1, the Applicants recite an intelligibility measurement system, which includes a means for hearing a speaker who is repeating items, a means for preparing a transcription of what was heard, a means for comparing the items with a transcription, and a means for measuring intelligibility. Similarly, in Claim 36, the Applicants recite an intelligibility measurement system that includes a nonlinear model

operable to provide an intelligibility estimate. Intelligibility is the degree to which others can understand a person's speech. (See, e.g., Applicants' specification, page 2, lines 12-13). Accordingly, the focus of the intelligibility measurement system is on a listener's ability to understand the speaker.

In contrast to the claimed invention, Rtischev describes a system for voice-interactive language instruction that produces a reading quality score. (See, e.g., Rtischev, Abstract.) The system can administer a lesson and evaluate performance while tolerating strong foreign accents from a non-native user. (See, e.g., Rtischev, column 2 line 66 to column 3 line 3.) The focus of the language instruction system is on the speaker's ability to read. Accordingly, Rtischev's system is capable of providing a reading quality score even if the speaker is difficult to understand.

A speaker may obtain a high reading quality score even though a listener may have difficulty understanding the speaker. Conversely, the speaker may obtain a low reading quality score, but is easily understood by the listener. The ability to read and the ability to be understood by others are two different abilities that require different testing methods. The system described by Rtischev does not provide a means for measuring the intelligibility of a speaker.

Additionally, Rtischev does not teach a means for preparing a transcription of what was heard. As described by Rtischev, the speaker reads or responds to questions and a speech recognition system provides a recognition score set, which is used to judge the speaker's reading quality. (See, e.g., Rtischev, column 5 line 47 to column 6 line 5.) A transcription of the speaker's responses is not necessary for the system taught by Rtischev, as a score set is directly provided by the speech recognition system.

Rtischev does not teach a means for preparing a transcription or a means for measuring intelligibility. Additionally, Rtischev does not teach providing an intelligibility estimate. Because Rtischev does not teach all the elements of Claims 1 and 36, Rtischev does not anticipate Claims 1 and 36.

Claims 2, 5, 7, and 8 depend from Claim 1. Claim 37 depends from Claim 36. Accordingly, the Applicants also submit that Rtischev does not anticipate Claims 2, 5, 7, 8, and 37.

In light of the above, the Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 102(b).

## **II. Claim Rejections under 35 U.S.C. §103(a)**

The Examiner rejected Claims 3, 4, 6, 8, 11-18, and 24-33 as being obvious in light of Rtischev. The Applicants have cancelled Claims 25, 27, and 31.

In Claim 11, the Applicants recite an intelligibility measurement system that includes a measurement unit operable to determine an intelligibility score of a speaker using a transcription of what a listener hears. Similarly, in amended Claim 24, the Applicants recite a method of measuring intelligibility that includes determining an intelligibility score of the speaker using a transcription of what the listener hears. As previously discussed, Rtischev does not teach a means for preparing a transcription of what was heard or a means for measuring the intelligibility of the speaker. Accordingly, Rtischev does not teach determining an intelligibility score of a speaker using a transcription of what a listener hears.

The Office Action states that it is well known in the art to have teachers listen to speakers so as to evaluate the intelligibility of their speech in terms of reading errors.

However, a teacher's evaluation of a speaker's intelligibility is a subjective evaluation. By comparing a transcription of what a listener hears the speaker say with the items that were spoken, the measurement unit provides an objective evaluation of a speaker's intelligibility.

Rtischev does not teach determining an intelligibility score of a speaker using a transcription of what a listener hears. The knowledge of one skilled in the art as described in the Office Action does not overcome this deficiency in Rtischev. Because the combination of Rtischev and common knowledge does not suggest each and every element of Claims 11 and 24, Claims 11 and 24 are not obvious in light of the combination of Rtischev and common knowledge.

Claims 3, 4, 6, and 8 depend from Claim 1. Claims 12-18 depend from Claim 11. Claims 26, 28-30, and 32-33 depend from Claim 24. Accordingly, the Applicants also submit that Claims 3, 4, 6, 8, 12-18, 26, 28-30, and 32-33 are not obvious in light of Rtischev.

The Examiner rejected Claims 9, 10, 19, 20-23, 25, 34, 35, and 38-40 as being obvious in light of Rtischev in view of U.S. Patent No. 5,059,127 ("Lewis"). The Applicants have cancelled Claim 25.

In Claim 21, the Applicants recite an intelligibility measurement system that includes a measurement unit operable to determine an intelligibility score of a speaker using a transcription of what the listener hears. As discussed above, Rtischev does not teach determining an intelligibility score of a speaker using a transcription of what the listener hears. Lewis fails to overcome the deficiencies of Rtischev.

Lewis describes a computerized mastery testing system providing for the computerized implementation of sequential testing in order to reduce test length without sacrificing mastery classification accuracy. (See, e.g., Lewis, Abstract.) However, mastery

testing is used to decide if an individual has attained a specified level of knowledge, not to determine the intelligibility of the individual's speech. (See, e.g., Lewis, column 1, lines 19-23.) Neither Rtischev nor Lewis suggests determining an intelligibility score of a speaker using a transcription of what the listener hears. Accordingly, Claim 21 is not obvious in light of the combination of Rtischev and Lewis.

Claims 9-10 depend from Claim 1, Claims 19-20 depend from Claim 11, Claims 22-23 depend from Claim 21, Claims 34-35 depend from Claim 24, and Claims 38-40 depend from Claim 36. Accordingly, the Applicants also submit that Claims 9-10, 19-20, 22-23, 34-35, and 38-40 are not obvious in light of the combination of Rtischev and Lewis.

In light of the above, the Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103(a).

### **III. Claim Rejections under Obvious-type Double Patenting**

The Examiner provisionally rejected Claims 1-40 under the judicially created doctrine of obvious-type double patenting as being unpatentable over Claims 1-3, 5-9, and 11-15 of co-pending Application No. 09/311,617 ("Townshend"). The Applicants respectfully traverse the double patenting rejection.

Townshend describes a method and apparatus for providing automatic language assessment using speech recognition and a scoring computational model that accounts for the accuracy of a speech recognition system. (See, e.g., Townshend, page 6, lines 4-6.) However, Townshend does not suggest or claim a method or apparatus for measuring intelligibility of a speaker using a transcription of what a listener hears. Because Townshend

does not suggest or claim a method or apparatus for measuring intelligibility, the Applicants' claims are not obvious from Townshend's Claims 1-3, 5-9, and 11-15.

### **CONCLUSION**

In light of the above amendments and remarks, the Applicants submit that the present application is in condition for allowance and respectfully request notice to this effect. The Examiner is requested to contact the Applicants' representative below if any questions arise or if she may be of assistance to the Examiner.

Respectfully submitted,

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**Marked-Up Copy of Claims**  
**Pursuant to 37 C.F.R. § 1.121(c)(ii)**

1. (Amended) An intelligibility measurement system, comprising in combination:  
a means for hearing a speaker who is repeating items;  
**a means for preparing a transcription of what was heard;**  
a means for comparing the items with **the** [a] transcription; and  
a means for measuring intelligibility **coupled to the comparing means.**
  
24. (Amended) A method of measuring intelligibility, comprising in combination:  
obtaining responses from a speaker **repeating items;**  
presenting **the** responses to a listener; [and]  
**creating a transcription of what the listener hears;**  
measuring accuracy **by comparing the items with the transcription; and**  
**determining an intelligibility score of the speaker based on at least in part on**  
**the measuring step.**